

**DECOLORIZATION OF TREATED PALM OIL MILL EFFLUENT  
(TPOME) BY COAGULATION AND HYDROGEN PEROXIDE**

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 The production of palm oil mill effluent in Malaysia**

Palm oil processing is carried out using large quantities of water in mills where oil is extracted from the palm fruits. During the extraction of crude palm oil from the fresh fruits, about 50% of water results in palm oil mill effluent (POME). It is estimated that for 1 tonne of crude palm oil produced, 5-7.5 tonnes of water ends up as POME (Ahmad et al., 2003). The solid waste products that result from the milling operation are empty fruit bunches, palm fiber, and palm kernel. In both traditional and modern milling settings, these solid waste products are all put to economically useful purposes such as fuel material and mulch in agriculture. It is the POME that is usually discharged into the environment, either raw or treated.

The various effluent treatment schemes which are currently used by the Malaysian palm oil industry are in the descending order: (a) anaerobic/facultative ponds (Rahim and Raj et al., 1982; Wong et al., 1980; Chan and Choi et al., 1982), (b) tank digestion and mechanical aeration, (c) tank digestion and facultative ponds, (d) decanter and facultative ponds, and (e) physico-chemical and biological treatment (Andreasen et al., 1982).